

ABSTRACT

While a biped walking mobile body is in a motion,
such as level-ground walking, the position of the center
5 of gravity (G0) of the biped walking mobile body, the
position of an ankle joint (12) of each leg (2), and the
position of a metatarsophalangeal joint (13a) of a foot
(13) are successively grasped. The horizontal position of
any one of the center of gravity (G0), the ankle joint
10 (12), and the metatarsophalangeal joint (13a) is estimated
as the horizontal position of a floor reaction force
acting point on the basis of the combination of the
contact or no contact with the ground at a spot directly
below the metatarsophalangeal joint 13a of the foot 13 and
15 a spot directly below the ankle joint 12, which is
detected by ground contact sensors 51f and 51r,
respectively, provided on the sole of the foot 13. The
vertical position of the floor reaction force acting point
is estimated on the basis of the vertical distance from
20 the ankle joint (12) to a ground contact surface.